

Savannah River Laboratory Oil Test Site

Background

The Savannah River Laboratory (SRL) Oil Test Site Operable Unit (OTS OU) is located near the center of the Savannah River Site (SRS), approximately 2,000 feet east of the intersection of SRS Roads 3 and 5. The site is separated from the Central Shops complex by a railroad spur. It is subdivided into two distinct areas of concern – the oil test site and the petroleum-contaminated soil temporary storage area.

The oil test site was divided into 27 test plots for the purpose of evaluating the ability of native microorganisms to biodegrade petroleum hydrocarbons. In 1975, researchers applied 220 gallons of used machine cutting oil to 12 test plots, each measuring 35 feet long by 12 feet wide. In 1976, varying amounts of fertilizer were applied to each of the plots, and 824 gallons of used hydraulic fluid and 1,100 gallons of used paint thinner were randomly applied to three additional plots (230 feet long by 10 feet wide). Oil test plots were sampled immediately after application, at regular intervals for the next two years, and again at five years post-application. Results indicated that after two years, approximately 50 percent of the applied oils were lost from the soil through biodegradation and volatilization. Testing at the SRL Oil Test Site ended in 1977. The petroleum-contaminated soil temporary storage area was located in close proximity to the oil test site. In 1990, the site received approximately ten truckloads of petroleum-contaminated soil that was stored on plastic sheeting for two months. The contaminated soil was removed from the site, and the storage area has not been used since.

Environmental Concerns

From 1975 to 1986, SRS environmental engineers took preliminary soil and soil gas samples in the area. Data indicates the petroleum products remaining at the test plots have not moved more than 30 centimeters below the soil surface.

Environmental Actions and Plans

Soil sampling was performed in 1997, 1998 and 2000 to collect characterization samples for screening. Three groundwater monitoring wells were installed around the OU and 13 Cone Penetrometer Testing (CPT) groundwater sampling locations were sampled to confirm that groundwater is not impacted at the OU. A RI Baseline Risk Assessment (RI/BRA) type evaluation was performed on all unit data, including data from 1997, 1998 and 2000. The evaluation was incorporated into a Work Plan with Baseline Risk Assessment which indicated that there would be no risk under a residential scenario and no risk to the environment including groundwater and ecological receptors. A meeting with the Core Team including the

Department of Energy (DOE), the United States Environmental Protection Agency (USEPA) and the South Carolina Department of Health and Environmental Control (SCDHEC) was held to identify the administrative path forward. A Work Plan with Risk Assessment was approved by the Core Team in June 2003. The Core Team agreed that No Action is the preferred alternative, and a Proposed Plan will be submitted in September 2003.